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Descriptions of new PYRALIDÆ.

BY GEO. D. HULST.

Some two years since I was led to endeavor to make a special study of the *Geometridæ* and *Pyralidæ*. The principal part of the work done by me up to the present time has been in the first family, —but I have been looking somewhat into the *Pyralidæ* and collecting at the same time, and a very considerable amount of material has accumulated, for which I can get no names. That it may be handled and in time classified, is the object of the present descriptive paper. The most of the *Pyralidæ* already described are determined in the different American collections. The National Museum has a very considerable collection by Belfrage, with Zeller's determinations I believe, though, coming through several hands, I am not able to say how much reliance can be placed upon them. Mr. Henry Edwards has some types, and many typical specimens of Mr. Grote, from the Pacific Coast, and his whole collection has had the advantage of Mr. Grote's determination. Prof. Fernald has the advantage of having the most, if not all, of Packard's, Grote's and Zeller's types identified. So, though Mr. Grote's types went to the British Museum, the loss is in part remedied by the possession of typical specimens. A large number of Lederer's, Guénee's and Walker's species have been determined, but quite a large number (almost all of them from the East and South) are yet, after from twenty-five to thirty years, unidentified. Some of them undoubtedly can never be determined. My material described below has been through the hands of our best American specialists, and has come back to me marked or declared "unknown to me." So, making use of the knowledge of others as well as giving faithful study myself, I publish the following as new species.

PYRALIDÆ.**PARÆDIS** Grote.

Parædis napæalis *sp. nov.*—Expands 22 mm. Head, antennæ and thorax fuscous cinereous; palpi and abdomen cinereous; fore wings cinereous along outer and inner margins, forming a broad band, fuscous brown along costa and

on central space; costa narrowly blackish, a black line along outer margin, a fine sinuous outer line, black, narrowly edged outwardly with white, in general direction nearly parallel with outer margin; a slight cloud representing the orbicular and reniform spots; fringe black at base, fuscous outwardly; hind wings fuscous, with black marginal line, and extra median line running in a curve from centre of anterior margin to outer margin just before anal angle; beneath much as above, but with lines more diffuse and indistinct.

One ♂, California. A smaller and more slender insect than the other species of the genus, with wings more extended and pointed.

PRORASEA Grote.

Prorasea lepidalis *sp. nov.*—Expands 26 mm. Head, antennæ and palpi fuscous; thorax dark gray above, light gray on sides. Abdomen light gray, annulated with white; fore wings dark fuscous, gray, crossed by two lines, the basal angulated at the middle, the outer spreading at costa, fine on upper middle portion, broader, and with two indentations near inner margin; a subquadrate white spot, concave outwardly and inwardly, between orbicular and reniform; subterminal space white, narrowest towards and not reaching apex; fringe fuscous cinereous, somewhat checkered with black at base; hind wings nearly even fuscous, with faint outer white line; margin ochreous fuscous, fringe cinereous; beneath, color lighter than above, spots and markings more diffuse.

Two ♂♂, Colorado, Montana. Nearest *P. indentalis* Grote.

AGLOSSA Latr.

Aglossa gripalis *sp. nov.*—Expands 26 mm. Head and thorax fuscous. Abdomen lighter, fore wings reddish fuscous, somewhat darker between the cross lines; the wings are crossed by two broad reddish ochre lines, the basal curved outwardly, striking the costa at nearly double the distance from the base that it reaches inner margin from base, the outer line making almost a right angle post-medially, and nearer the basal line at costa than at inner margin; hind wings very light reddish ochre; all fringes reddish fuscous; beneath light reddish fuscous, lines scarcely reflected; fringes darker than wings.

Two ♂♂, Colorado. Nearest to *A. cuprealis* Hübn., of Europe, of which Zeller says he has received specimens from Texas also.

Aglossa electalis *sp. nov.*—Expands 25 mm. Head, thorax and fore wings dark fuscous; two broad, light ochre lines on fore wings, one extra basal, the other extra discal, both somewhat curved outwardly, and both somewhat confused along edges; fringe fuscous; the dark portion of the fore wings is somewhat striated longitudinally with light ochreous; hind wings white, with a fuscous shade, with faint fuscous median line, and faint fuscous along outer margin; beneath fore wings light fuscous, lines hardly visible; hind wings as above; all wings with a marginal broken line of black.

Two ♂♂, Arizona. Much resembling *A. domalis* Guén., in some respects, and perhaps nearest to it.

ASOPIA Tr.

Asopia enniculalis *sp. nov.*—Expands 26 mm. Head light ochre; antennæ pink at base, white at tip; thorax, abdomen and wings reddish ochreous, the hind wings being lighter at base; fringes concolorous, the color of the fore wings is more pronounced along costa, and at tip forming small, almost brick-red spots; fore wings crossed by two fine whitish lines, the basal straight, reaching costa and inner margin at equal distances, about one-fourth length of wing, the outer sinuate, but straight, parallel with outer edge during first half of its course; a submarginal row of black points; beneath, nearly the same as above, somewhat glistening, lighter along inner margin of all wings; dark brown discal spot present on all wings, but no lines apparent.

One ♂, Colorado. Hardly congeneric with *Asopia*.

Asopia occidentalis *sp. nov.*—Expands 28 mm. Head, antennæ, thorax and fore wings olive fuscous ochre; costa of fore wings ochreous; fore wings crossed by two light ochre lines, the basal wavy, but nearly straight, the outer sinuous, both lines spreading at costa; hind wings uniform white, with a faint or strong fuscous shade; beneath, fore wings as above, but lighter; costa and outer edge most shaded; hind wings as above.

Two ♂♂, Colorado. Nearest *A. planalis* Grote.

Asopia culiculis *sp. nov.*—Expands 17 mm. Head, thorax and fore wings ochreous. Abdomen and hind wings fuscous ochreous; there are two light ochre lines on the fore wings, rather near together, wavy, straight in general direction, parallel to each other; beneath, decidedly reddish, the outer lines of the fore wings present, and a whitish line on the hind wings on outer third parallel with outer edge; fringes above fuscous, below ochreous.

One ♂, Florida.

EMPREPES Led.

Emprepes magnalis *sp. nov.*—Expands 28 mm. Head and antennæ light ochreous; thorax very light ochreous, with ochreous dottings. Abdomen white; fore wings ochreous, white posteriorly at base; two fuscous lines, the basal rounded outwardly, but with dentation inwardly near middle, the outer with a sinus outwardly just before middle, and another not so deep near inner margin; the line outwardly, and the outer line inwardly, broadly edged with a white line; a white circular spot on disc; a band of deep ochreous just beyond outer line; subterminal space light ochreous, a line of marginal dentations ochreous; hind wings white, with ochreous shade outwardly and indications of a fuscous median band; beneath, fuscous white; darkest along costa and centrally on fore wings, otherwise nearly white.

Two ♂♂ one ♀, Arizona. Nearest *E. novalis* Grote, but very much larger, with differences in details of fore wings, and nearly white hind wings.

SCOPARIA Haw.

Scoparia ninguidalis *sp. nov.*—Expands 26 mm. Head, antennæ, thorax, abdomen and wings uniform blackish fuscous, the hind wings appearing

lighter, as being more thinly scaled; on fore wings orbicular and reniform black, and on hind wings a black discal spot; a faint extra basal line on fore wings; below same color as above, with one dark spot on each wing; all fringes a shade lighter than general color.

One ♂, Arizona. Nearest *S. centuriella* S, V., but differing in color, and with wings narrower, more extended and less rounded outwardly.

Scoparia nominatalis *sp. nov.*—Expands 18 mm. Head, antennæ and thorax dark fuscous; antennæ at the tips and abdomen fuscous cinereous; fore wings dark fuscous, broken with cinereous scales, a whitish basal line, rather broad, curved evenly outward, and a whitish extra median line, rather broad, sinuous, bent very much just below middle; a subquadrate cinereous spot between reniform and orbicular, and a subterminal cinereous line with a sinus inwardly near middle; fringe cinereous, broken with black at base; hind wings fuscous, margin darker; beneath, fore wings uniform fuscous; hind wings lighter, with indications of an extra median band near anterior margin.

One ♂ two ♀, Vancouver Island.

Scoparia refugalis *sp. nov.*—Expands 20 mm. Very much as the preceding species, but with color of head, thorax and wings lighter; basal line black, wavy, lined inwardly with cinereous, outer line whitish, nearly straight, with slight inward sinus near costa; marginal line cinereous; beneath, as preceding species.

Two ♂ one ♀, California.

CHALCÆLA Zell.

Chalcoela gemmalis *sp. nov.*—Expands 15 mm. Head brown, palpi brown, fringe in front; thorax and basal portion of fore wings rich golden-brown; fore wings beyond light ochre, with fuscous shadings; margin yellowish brown, fringe black; near middle of wing, also just within indicated extra median line, and also on subterminal space at middle, is a velvety black spot, the three being in a row; a fine black line runs from costa to middle spot; there is also midway along costa a faint subcostal black spot; each of all these spots surrounds a few bright golden metallic scales; there is also a line of metallic gold basally along costa; hind wings nearly even, fuscous; beneath, fuscous with a golden tinge, a white spot on costa at beginning of outer line, which is indistinct; an outer cinereous line on hind wings; all margins with whitish lines; fringes fuscous.

Two ♂ ♂, Sierra Nevada Mountains, California. The second specimen has the golden-brown of thorax and fore wings replaced with fuscous.

BOTIS Schrank.

Botis roseopennalis *sp. nov.*—Expands 18 mm. Head above white, in front bright rosy; antennæ yellow, rosy at base; palpi rosy above, white below; thorax rosy, yellow at shoulders; fore wings clear canary-yellow; costa for two-thirds from base bright rosy, connecting with an outer band of same color, this

merging at inner angle with a broad marginal band of the same color also; hind wings white; beneath, marked as above, the yellow replaced with white, the rosy hue with the same color, much duller, however, and more diluted.

Two ♂♂, North Carolina, Arizona. Near *B. laticlavia* G. & R.

Botis bellulalis *sp. nov.*—Size of *B. diffissa* G. & R., and quite likely a variety of that species, but it differs as follows: the palpi are fuscous, not ochreous; the thorax and abdomen are fuscous, with a vinous tint, not bright vinous red; the fore wings are dull vinous fuscous, without yellow basal band or yellow discal spot; the hind wings are dull vinous fuscous; beneath, the color is dull vinous, with only faint indications of the outer band.

One male three females, Texas.

Botis bububattalis *sp. nov.*—Expands 17 mm. Head very dark fuscous, palpi fuscous; thorax and abdomen dark fuscous; fore wings dark maroon-brown with a white line just within the middle, and another one at margin, both parallel with outer edge; two small extra median spots just before the middle of wing, also a bidentate fine yellowish line just before and reaching inner margin; hind wings dark fuscous, fringes lighter; beneath, dark fuscous, fringes lighter.

One ♂, Colorado. Allied to *B. volupialis* Grote.

Botis psychialis *sp. nov.*—Expands 14 mm. Antennæ, thorax and abdomen light ochreous; front white; between the antennæ, and at summit of thorax, and on fore wings rich yellow; fore wings crossed by two white lines, the basal straight, the outer bent outwardly above middle; a white basal spot and white basally along inner margin; margin fuscous, fringes fuscous at base, cinereous outwardly; hind wings whitish, a faint fuscous median band and margin, and fringe fuscous; beneath fuscous, outer line and veins beyond line light fuscous.

Two ♀♀, Georgia, Texas. Though much differing in color this seems to be best placed in the *diffissa* group.

Botis rogatalis *sp. nov.*—Expands 19 mm. Palpi, head, thorax and abdomen fuscous; fore wings broken fuscous and fuscous cinereous; the basal space with a black spot medially, two white lines cross the wings, the first extra basal edged with dark fuscous, the outer after the typical *Botis* pattern; a dark brown spot annulate with white at reniform; a dark brown subtriangular apical patch, and a subterminal white line; marginal line black, broken; hind wings, even fuscous; beneath, lighter, lines obsolete, reniform indistinct.

One ♀, Texas.

Botis hariolalis *sp. nov.*—Expands 18 mm. Head, body and wings dark blackish fuscous; the fore wings are crossed by two broad pure white lines, the first straight, the outer after the *Botis* pattern, but with the sinus very deep and much extended posteriorly; the two lines closely approximate at inner margin; costa white near apex; fringe white just below apex and at posterior angle, otherwise concolorous with wing; hind wings white at base, with a rather broad intra-median white line nearly straight extending across wing, and an outer white line not reaching either margin and hardly passing middle posteriorly; fringes white, interlined with black; beneath, as above.

One ♂, Florida. Allied to *B. adipaloides* G. & R., though very different in ornamentation.

Botis offumalis *sp. nov.*—Expands 18 mm. Palpi and head dark fuscous cinereous; antennæ black; thorax and abdomen dark fuscous; fore wings fuscous, shaded with black; a black basal dash; orbicular and reniform black; beyond reniform a lighter fuscous spot; two fine black lines cross the wings, the first sloping obliquely outward, the outer after the *Botis* pattern, merging behind reniform with the first, and extending with it in a dark cloud to inner margin; subterminal space fuscous, inclosing dark fuscous shading; marginal line of dentate black spots; hind wings dark fuscous with a central row of lengthened black points and a dark fuscous broad marginal band; beneath, light fuscous; lines and bands obsolete, orbicular and reniform indistinct.

One ♀, San Diego, California.

Botis lulualis *sp. nov.*—Expands 26 mm. Head, thorax and abdomen clear black, intermingled with white scales, giving, especially on posterior segments of abdomen, a cinereous appearance. Abdomen annulated with white between segments, white on sides; fore wings bright black, intermingled at base, except medially with white scales, giving a cinereous appearance; a white basal line twice angulated outwardly; orbicular and reniform black, the latter edged inwardly with a whitish crescent; on the extra median space the black is much mingled with white scales, forming a broad cinereous band which outwardly encloses a fine, sinuous, finely dentated black line; hind wings black on basal third; central space pure white, oval, enclosing outwardly a line of black points; a broad black marginal band; beneath, with basal space and margin black on all wings, black on central space of fore wings, black discal points; the rest smoky white; the hind wing has the row of black points repeated.

Two ♂♂, California, Anticosti Island. Allied to *B. flavinotalis* Grote.

Botis nexalis *sp. nov.*—Expands 18 mm. Head and thorax above black; palpi, basal two-thirds of costa and sides of thorax fulvous brown; rest of wings and abdomen dark fuscous; the fore wings are crossed by two white hair lines, the basal (not reaching costa) zigzag, with two large dentations outwardly, the outer starting at costa, where it broadens some, and further out than usual, crosses to inner margin with a much smaller sinus than usual; reniform round, orbicular lengthened, quadrate, constricted at middle, reaching obliquely backwards half across the wing, both edged with white hair lines; that of reniform almost coalescing with outer cross line; submedian vein dotted with white on median space; marginal line white; fringe fuscous; beneath, a shade lighter than above, the outer line present on both wings, and a marginal row of narrow spots on all wings.

One ♂, Sierra Nevada Mountains, California. May be placed near *B. lethalis* Grote.

Botis salutaris *sp. nov.*—Expands 18 mm. Head, body and abdomen ochreous fuscous; eyes edged with white. Fore wings ochreous fuscous, crossed by two white hair lines further out, more approximate than usual, and parallel with each other; both are angulated below costa, then wavy to inner margin; hind wings shading from color of fore wings outwardly, to very light at base;

an outer white line apparent near anal angle; fringes white at base, fuscous outwardly; beneath, fuscous; a white spot at costa of fore wings; margin dark fuscous.

One ♂, Oregon. Near the preceding species.

Botis venalalis *sp. nov.*—Expands 22 mm. Palpi fuscous; antennæ somewhat lighter; head, thorax, abdomen and wings smoky bone white; the lines of the fore wings fine, fuscous, the basal forming a right angle just below costa, then running straight across; the outer forming a right angle one-fourth out, then running nearly straight to margin, and continued with some waviness across hind wings; all wings with fuscous marginal lines; fringes very light; beneath, dirty squammose fuscous; outer line as above, but broader; marginal line present as above.

One ♂, New York. This and the next three species may be placed near *B. marculenta* G. & R., although the above is in some respects aberrant.

Botis pilalis *sp. nov.*—Expands 23 mm. Palpi, vertex and shoulders ochreous; thorax and fore wings ochreous yellow; basal line fuscous, broad, nearly straight; outer line same color, after the *Botis* pattern, but at the angle of the great sinus met by a line from the costa, curved, crossing dark reniform spot and inclosing with sinus a nearly circular space; orbicular present; a faint subterminal fuscous line parallel with outer edge; margin darker than ground color; hind wings light ochreous outwardly with fuscous outer line; also faint subterminal shading of same color; beneath, light ochre, lines much as above; subterminal and marginal lines of fore wings more pronounced.

Two ♂♂, Indian River, Florida.

Botis confovealis *sp. nov.*—Expands 23 mm. Palpi fuscous; breast pure white; thorax ochreous in front, fuscous behind. Abdomen fuscous. Fore wings even ochreous, a little deepened along costa; outer line very faintly apparent near middle of wing; hind wings white; faint fuscous outwardly; beneath, light ochreous fuscous, outer line very faint; hind wings a little lighter than fore wings.

Two ♂♂, Texas.

Botis pergilvalis *sp. nov.*—Expands 26 mm. Pale yellow, with ochreous shadings, especially along the costa; lines much as in *B. pilalis* above, though they are not so dark, and the wings are much broader; hind wings pure glistening white, a little fuscous outwardly, and with fuscous outer line, but no subterminal shading.

Three females, Arizona. Very near to *B. dasconalis* Walk., and *B. coloradensis* G. & R. This and the latter may both be varieties of the *B. dasconalis* Walk.

Botis gracilalis *sp. nov.*—Expands 23 mm. Pure white; fore wings very narrow and extended; an ochreous tinge along costa; bands fuscous, both somewhat interrupted, the outer nearly parallel with outer margin; a fuscous shading in middle field; hind wings with subterminal fuscous band; marginal line on all wings, fine black, interrupted between veins; beneath, pure glistening white.

Two ♀♀, Texas.

Botis hædulalis *sp. nov.*—Expands 23 mm. Fore wings fuscous, very thinly scaled; basal line broken into dots; outer line fine, sharply and strongly dentate, and after the *Botis* pattern; orbicular and reniform black; marginal line fine, black; hind wings pale fuscous pellucid; beneath, same color as above, with lines faintly reflected.

One ♂, Texas. Seems to be near the preceding species.

Botis gyralis *sp. nov.*—Expands 26 mm. Head, palpi, antennæ, thorax and fore wings ochreous fuscous; fore wings somewhat striated with light ochreous; of the latter color also is a somewhat triangular discal spot, base outward, beyond which and beyond reniform is a lunule of the same color; an outer cross line of the same color, not reaching costa; a marginal fuscous line, somewhat indistinct; fringe fuscous ochreous; light ochreous at base; hind wings light ochreous, with fuscous shadings; pellucid towards base; a discal spot apparent; also outer dentate cross line; margin fuscous; fringe light ochre; beneath, fuscous, with an ochreous shade on centre of fore wings; outer lines present; hind wings lighter, nearly or quite white at base.

Three males and one female, New York, Colorado, Nova Scotia. Near *B. opilalis* Grote.

Botis invinctalis *sp. nov.*—Expands 26 mm. Head, antennæ, palpi and thorax smoky fuscous; wings white, evenly washed with light fuscous; fore wings with inner line close to base, indistinct, broken; outer line represented by a sinuate row of indistinct points; orbicular a fuscous spot annulated with black, rather large; reniform large, extending to costa, and forming a spot of fuscous and black; three black costal dots beyond apex; margin with prominent black spots; marginal row of black spots on hind wings; beneath, considerably fuscous; spots indistinct; a submarginal and marginal row of black points, distinct.

One ♂, Washington Territory. Nearest to *B. turmalis* Grote, but apart from color differences, the wings are much broader than in that species.

Botis labeculalis *sp. nov.*—Expands 20 mm. Palpi fuscous; head and antennæ fuscous ochreous; thorax and abdomen light ochreous; fore wings ochreous yellow; subterminally and at costa with brownish tinge; basal line slightly curved, wavy; outer, of the usual pattern; orbicular black; reniform black, lengthened, nearly or quite reaching outer line at median angle; marginal line brown; fringe fuscous; hind wings white at base, light ochre outwardly; outer line present, very strongly sinuate outwardly at middle; a faint subterminal fuscous band; marginal line and fringes as on fore wings; beneath, smoky light ochre; fringes fuscous; line reflected through.

One ♀, Arizona. Close to *B. flavidalis* Guén.

Botis levalis *sp. nov.*—Expands 30 mm. Rather bright yellow; costal space brown; basal line brown, nearly or quite obsolete posteriorly; orbicular black; reniform a yellow space surrounded with dark brown line, lengthened quadrate in shape; outer line faint, clear near costa; subterminal space brown, widening near costa, sometimes obsolete posteriorly; hind wings yellow; discal spot prominent; cross line faint, quadrately bent; marginal line brown, especially prominent and broad at outer angle; beneath, as above, but much more indistinct.

Two ♂♂ two ♀♀, Indian River, Florida, California. The one specimen from California is somewhat more heavily marked with brown, and varies some in the direction of the outer lines, but is, I think, conspecific with the Florida specimens. The species belongs to the *flavidalis* group.

Botis octosignalis *sp. nov.*—Expands 20 mm. Head, palpi, shoulders and antennæ light ochreous. Abdomen white; fore wings light ochreous; costal space and markings buff; basal line rounded, outer line sinuous, both even, without indentations; orbicular obsolete, reniform like a lengthened figure 8, sometimes solid; a faint subterminal fuscous shading; marginal line fine, buff; hind wings white, faintly ochreous outwardly; marginal line fine, brownish; beneath, nearly uniform white.

One ♂ two ♀♀, California, Texas. Seems to be near *B. citrina* G. & R.

Botis succandidalis *sp. nov.*—Expands 22 mm. Head ochreous; palpi ochreous above, white below; antennæ dark ochreous; thorax and abdomen light ochreous; fore wings light cream-white, without any markings; hind wings white, with a fuscous shading outwardly; fringes white; beneath, fore wings fuscous, hind wings white; all fringes white.

One ♂, Black Hills, D. T. Probably not rightly placed in *Botis*, as the clypeus has a somewhat prominent cylindrical tubercle, flat on end.

Botis festalis *sp. nov.*—Expands 30 mm. Head, thorax and fore wings reddish ochreous; hind wings of same color, but thinly scaled and pellucid at base; all wings without markings; beneath, as above, smoother, and a shade more ochreous.

Two ♀♀, Arizona. Closely allied to *B. reversalis* Guén.

Botis uxoreulalis *sp. nov.*—Expands 24 mm. Head, thorax and fore wings dark violet brown. Abdomen and hind wings fuscous brown; fore wings with the usual lines, white, fine, the outer broadening to a white patch at costa; hind wings with outer line fine, not much bent, and not reaching anal margin; orbicular and reniform on fore wings, indistinct black, the latter annulate; beneath, dark fuscous; hind wings light towards base, and fore wings along inner margin; lines well marked, broader than above, but not so definite; orbicular and reniform distinct on fore wings; discal spot on hind wings; all blackish.

Three males, Sierra Nevada Mountains, California. In some specimens the lines are broader and the violet color is lost. Near *B. niveicillialis* Grote.

Botis obnigralis *sp. nov.*—Expands 25 mm. Dark squammoscous fuscous; orbicular and reniform dull black; a subquadrate, dull white, spot between; no inner line; a white outer band, waved, but nearly parallel with outer margin; border fuscous, whitish, inclosing broken black marginal line; hind wings with a central whitish space, border as in fore wings; beneath, lighter; spots prominent, band dull, costa whitish; hind wings whitish.

One ♂, Sierra Nevada Mountains, Cal. Near *B. subolivalis* Pack.

Botis thrallophilalis *sp. nov.*—Expands 24 mm. Head. antennæ, palpi above, thorax and fore wings rich dark brown; palpi, thorax and abdomen below white, or light ochre. Abdomen above very dark brown; lines on fore wings black, fine dentate; the outer nearer margin than usual; outer space darker, with veins lined with black; orbicular and reniform black; hind wings brown, becoming black along border; beneath, light brown; outer line apparent; veins on outer space of fore wings blackish; margin blackish, somewhat broken between the veins; hind wings with discal point and marginal row of black points.

Two ♀ ♀, California, Montana. Seems to be allied to *B. badi-pennis* Grote.

Botis monulalis *sp. nov.*—Expands 28 mm. Fuscous throughout. Abdomen annulated with white; fore wings on basal and middle fields mixed with lighter fuscous; orbicular and reniform indistinct, space between light ochreous, outer line light ochre, very fine, but enlarging subcostally into two decided spots, and again at inner margin; outer space dark fuscous; hind wings lightening towards base; outer line evident, showing white spots in middle; beneath as above, but lighter; lines more distinct; hind wings much cinereous towards base; fringes above and beneath fuscous on fore wings, cinereous to fuscous on hind wings.

Two ♂ ♂ one ♀, Sierra Nevada Mountains, California. Belongs near *B. erectalis* Grote.

Botis immaculalis *sp. nov.*—Expands 32 mm. Front fuscous ochreous; palpi lighter; fore wings above and below dull white, faintly tinged with fuscous; hind wings nearly white above and below; all wings with fuscous shading at margin very light; no spots, lines or bands.

Two ♀ ♀, Montana. Allied to *B. vacunalis* Grote.

Botis fumoferalis *sp. nov.*—Expands 32 mm. General color blackish fuscous; markings on wings as in *B. erectalis* Grote, but with all parts much darker; submarginal band on all wings nearly black; marginal line black, interrupted by the dark fuscous veins; beneath, dark cinereous on basal and middle spaces to beyond outer cross lines; dark fuscous outwardly; margin black, with lighter points at end of veins; hind wings dark cinereous; margin as on fore wings.

Three males one female, California, Arizona. This is very near in markings to *B. erectalis* Grote, and is likely the Western form of that species.

Botis oblectalis *sp. nov.*—Expands 30 mm. Palpi, head, thorax and wings generally smooth, even ochreous fuscous; tongue and maxillary palpi white. Abdomen posteriorly fuscous, annulated narrowly with white; fore wings fuscous along costa at base; lines fuscous, the first rounded, the outer sinuous, not much bent, very oblique; outer margin fuscous brown; orbicular and reniform present, small; fringe nearly black, with a space just before middle of wing and another just before outer angle where the outer two-thirds of the fringe is pure

white; hind wings lighter along inner margin and basally, with dark marginal line; fringe light cinereous, dark fuscous at middle; beneath, as above, somewhat lighter in ground color, but with same markings.

Two ♂♂, Arizona. Unlike any species I know of, and perhaps not a *Botis*.

***Botis scurralis* sp. nov.**—Expands 28 mm. In general coloration like *B. perrubralis* Pack., but differing as follows: In *perrubralis* the ground is yellow washed with red, and there are two fine red cross lines. In this species the ground color is even canary yellow, and this color is immaculate, save by the faint discal spot. In *perrubralis* the outer band is bright reddish brown, being darker next to median space; the costa is edged with the same color; there is a broken yellow marginal line, and the fringes are dark reddish brown. In *scurralis* the outer band is clear pink, uniform; the costal band is of the same color, and is much broader than in *perrubralis*. There is no marginal line; posteriorly there is a fading of the pink into a broad subterminal band, and the fringe is fuscous, becoming yellow posteriorly. In *perrubralis* the band on the hind wings extends only two-thirds across the wing and in my specimens ends abruptly and is reddish fuscous. In *scurralis* it generally reaches anal angle and fades posteriorly along margin into light ochreous. These differences in part hold good for the under side.

One ♂ two ♀♀, Arizona. The species are nearly related, and *scurralis* may be a variety, but it holds its own in Arizona, and I have seen no tendency to intergradations.

***Botis gulosalis* sp. nov.**—Expands 34 mm. Palpi brownish; head ochreous fuscous; thorax fuscous, much lighter posteriorly. Abdomen fuscous, somewhat annulated with white, very light on first two segments; an anal tuft fuscous at base, light ochre at extremity; fore wings fuscous, somewhat iridescent; a median basal spot; a white subcostal line reaching out from base nearly half the length of wing; orbicular and reniform present, with white space before, between and following them; an outer black line, sinuous, edged outwardly with whitish, which is broken into rather large spots by the blackish veins, each of these spots dentate outwardly and there edged with black; two corresponding spots within the outer line in the bottom of sinus; apex ochreous, rounded; margin black; fringe light fuscous, white at outer angle; hind wings semi-hyaline with basal line angulated at middle; outer and submarginal lines very dentate; all lines fuscous, submarginal space with an ochre shading; margin black, fringe white; beneath generally lighter, but with a broad, dark, fuscous, marginal band.

One ♂, New York. This insect is not properly a *Botis*, but like a few above, and some to follow. I can find no satisfactory home for it in any genus after a study of Lederer and other systematists. In many cases I have not been able to make a complete examination, in view of the scarcity of material, and the fact that, very unfortunately, much of it is not my personal property.

EURYCREON Led.

Eurycreon aureolalis *sp. nov.*—The size and markings of *E. chortalis* Grote, but with the fore wings bright, smooth, deep golden yellow, and the hind wings yellow fuscous; beneath, with orbicular and reniform evident, and outer and marginal lines on all wings; color of wings yellow fuscous; lines fuscous.

One ♂, Arizona.

STENURGES Led. (*Agathodes* Guén.)

Stenurges floralis *sp. nov.*—Expands 31 mm. Palpi dirty whitish; head same color in front; white between the antennæ and along eyes in front; thorax white; patagiæ dirty yellow. Abdomen, first segment white, the next reddish brown above, edged behind with white, then olive-brown, slightly annulated with dark brown at segments; blackish anteriorly on sides; fore wings with costa narrowly white; a broad mixed pink and brown-red band starts from inner margin at middle and runs straight to costa, striking it two-thirds distance out from base, and there meets and merges with a similar band from centre of outer margin; these lines are edged with a fine metallic silver line; field within the line basally, and apical space dirty olive; space at outer angle ferruginous; at base in olive space is a dark fuscous dash; fringe wine red towards apex, whitish posteriorly; marginal line white, fine; outer border not angulated; hind wings pale fuscous, with an ochreous reddish tinge; beneath, pale dirty fuscous; legs pure white.

One ♂, Indian River, Florida. Near *S. monstralis*, Guén.

MEGASTES Guén.

Megastes coeligenalis *sp. nov.*—Expands 40 mm. Palpi and front dull ochreous; vertex yellow, white between antennæ and eyes; thorax and abdomen fuscous, lighter dorsally; fore wings fuscous hyaline; costa and base fuscous, the costa, within edge, black, especially near middle of wing; a fuscous olive broad intra-medial band oblique; orbicular and reniform prominent, annulate; space beyond band thinly fuscous, almost hyaline; a narrow shading running from orbicular to anal angle and a costal apical line soon returning beyond itself to costa near apex; outer margin somewhat falcate, sinuous, angulate at middle; hind wings shining semi-hyaline; angulate at middle of anterior margin; this angle and at the outer angle dark brown; two faint submarginal cloudings near apex; margin blackish; beneath, semi-hyaline; orbicular and reniform distinct; two outer dark lines on fore wings, and apically on hind wings; margins brown; legs cinereous fuscous.

One ♂, Indian River, Florida. Near *M. grandalis* Guén.

OROBENA Guén.

Orobena reluctalis *sp. nov.*—Expands 16 mm. Labial palpi ochreous brown, white at tip; maxillary palpi quite prominent, white; clypeus swollen, ochreous at top, white below; vertex white; collar white; patagiæ edged with white, otherwise with the thorax golden ochreous; abdomen ochreous, rather broadly annulated with white; fore wings golden, with a brownish shade; two

white lines, the first intra-median, rather broad, reflected at a right angle near costa, then straight across wing; the outer finely edged inwardly with brown, beginning at costa just beyond first line, running straight towards outer edge, but just before reaching it turning and crossing parallel to outer margin; beyond outer line at apex yellow; marginal line smoky cinereous, inclosing a row of subobsolete black points, the one at apex being most distinct; fringe cinereous, ochreous at base; hind wings white, washed with fuscous ochreous towards outer margin; beneath, light fuscous, with an ochreous tinge; lines faint, except marginal line, which is distinct, black.

Two males three females, Arizona.

Orobena castanealis *sp. nov.*—Expands 16 mm. Palpi dark fuscous; head dirty cream ochreous; clypeus quite prominent; antennae, thorax, abdomen and wings light castaneous; patagiæ edged with dirty cream white; fore wings with cream white line close to base, running obliquely outward to inner edge; a median cream white band, bifid at costa, inclosing light castaneous triangular space; hind wings washed at middle and outwardly with fuscous, this, however, not reaching margin; marginal border light castaneous; beneath as above, but duller; lighter band hardly reflected; washed with fuscous medially on all wings.

One ♂, Texas.

Orobena subcitrinalis *sp. nov.*—Expands 18 mm. Fore wings light yellow to cross line, more ochreous beyond; one cross line, broad, dark, reddish brown, extra median, broadest at inner margin, broadly separated from costa, edged inwardly with white; hind wings white at base, washed with fuscous ochreous outwardly, the color somewhat pronounced on veins; beneath, color as above, but with cross line very faint.

One ♂, Arizona.

Orobena seminivealis *sp. nov.*—Expands 18 mm. Palpi, head, thorax, abdomen and basal half of fore wings snow white; a broad, dark brown, median cross line, angulated outwardly just before middle, otherwise nearly straight; beyond angulation and merged with it is a round black spot, sometimes white within; outer space fuscous white, slightly washed at points with yellow; a marginal row of black points; fringes white; hind wings pure white, washed with fuscous outwardly; beneath, fore wings fuscous white; line and spot faint; hind wings white, with a faint fuscous tinge.

One ♀, Arizona.

GLYPHODES Guén.

Glyphodes alitalis *sp. nov.*—Expands 28 mm. Palpi dark brown, orange near base; front white, with a fine middle line orange ochreous; thorax orange ochreous, with white dorsal line; patagiæ lined with white. Abdomen ferruginous orange anteriorly; on the sides checkered with white; posteriorly fawn, last segment dark brown; fore wings orange ochreous, narrowly white at base; a small white spot just beyond along inner margin; inner line curved, running obliquely outward, hyaline at middle; a large intra-median hyaline spot, oval, edged with white at costa and at inner margin; another large hyaline spot be-

yond and half including reniform, edged at costa with white; outer line near margin and parallel with it, white, dentate and heavy near costa, broken medially and posteriorly; an outer apical dark cloud and a white marginal line not continued to apex; all white and hyaline spots and lines very narrowly edged with dark brown; hind wings hyaline to fuscous, inner edging of outer white cross line somewhat ochre-clouded anally; cross line edged on both sides with fuscous; outer space ochreous, clouded with fuscous near the margin: just within the margin light ochre; marginal line black, very fine; fringes all orange at base, whitish outwardly; beneath, fuscous; hyaline spots as above; white, obsolete, except a costal apical spot, marking end of outer line on fore wings.

Three males two females, Florida, Texas.

EUDIOPTIS Hübn.

Eudioptis oratalis *sp. nov.*—Expands 32 mm. Palpi fuscous ochreous; head ochreous, the front below with a bunch of hairs with enlarged mass on end; thorax and all wings rich golden yellow, rather thinly scaled. Abdomen yellow fuscous; fore wings crossed by two fine fuscous lines; the basal nearly straight, the outer much after the *Botis* pattern; a dark brown discal spot with scales somewhat raised; fringe fuscous at base, lighter outwardly; hind wings with one line; extra median continued from that of fore wings; a faint fuscous sub-terminal line; fringe as on fore wings; beneath, light fuscous yellow, iridescent, the markings of the upper side faintly reflected.

One ♂, Louisiana.

DESMIA Westw.

Desmia confusalis *sp. nov.*—Expands 28 mm. Head and body generally dirty fuscous; antennæ with a very prominent nodule on the inner side, about one-third distance out, convex on outer side, hollowed out on inner, with no vestiture; collar a distinct ruff, rising to an edge; wings dirty fuscous, somewhat vitreous; fore wings with a darker cloud on the outer third towards middle, and at anal angle; a basal and outer black line, both irregular and much dentated; a marginal line of triangular black spots; orbicular annulate, as also reniform; a small black spot at middle of basal field, and another at middle of inner margin; hind wings with dark marginal band; faint indications of outer line; the rest semi-hyaline fuscous; beneath, shining light fuscous, lines faint. Legs fuscous; fore and middle tibiæ very short, very heavily edged with hairs inwardly.

One ♂, Indian River, Florida. To me a very remarkable insect. Its coloration is rather aberrant for this group; it is certainly not a *Desmia*, though nearer that than any other American genus; its antennæ would place it close to *Pycnarmon* Led.; its legs might make it congeneric with *Antigastra* Led. If I had arrived at the point of genus making, this with several others would give a fair field for effort.

ZINCKENIA Zell.

Zinckenia perfuscalis *sp. nov.*—Expands 28 mm. Whole insect generally uniform very dark fuscous, nearly black; tongue white; antennæ nodose a little out from base, then strongly curved; antennæ black at nodule and base. Abdomen annulate with fine white; fore wings with two fine light fuscous lines; the first straight, the outer continued on hind wings as well, after the *Botis* pattern; orbicular and reniform revealed by light spot between, and light crescent beyond; just at base is a large costal fold on upper surface, reaching to beyond basal line, light fuscous underneath it; beneath, shining cinereous fuscous; lines faintly apparent; legs and body light cinereous, except fore tibiæ, which are nearly black on lower half.

One ♂, Florida. Another aberrant species, perhaps more properly placed in the genus *Ceratoclassis* Led.

ISOPTERYX Guén.

Isopteryx xeniolalis, *sp. nov.*—Expands 14 mm. Palpi, head and antennæ ochreous; wings clay white; fore wings with costa blackish, except towards apex; two black points near base representing a basal line; an intra-median line broken at middle; an extra median line, oblique, sinuous, not reaching costa; an outer line, also sinuous, crossing the wing; a subterminal shade connected with margin with a black dash at middle of wing; margin and fringe black, the latter light at base; hind wings with three black lines, median, extra median, and subterminal; the first straight, heavy; the others fine, sinuous; margin black; fringe light, somewhat interlined with black; beneath, as above, lines fainter and more indeterminate.

One ♂, Texas.

HYDROCAMPIDÆ.**HYDROCAMPA** Guén.

Hydrocampa gyalis *sp. nov.*—Expands 19 mm. Palpi fuscous ochraceous; front white; vertex, thorax, abdomen and fore wings fuscous ochraceous; patagiæ edged with white. Abdomen broadly annulated with white; fore wings with basal line; dark brown, straight, but swollen on outer margin before middle, edged on both sides with white; extra median costal patch, white, ochreous within, edged with a sinuous black line, and that outwardly with white; patch along inner margin dark fuscous, edged outwardly with white; this patch is rounded anteriorly, then constricted, then broadens on both sides to inner margin; a subterminal white line; margin black; fringe fuscous ochraceous, brokenly edged at ends with white; adjoining all white parts the fuscous color of the field is rather deepened; hind wings white at base, fuscous ochraceous outwardly; a double median black line not reaching anal margin; a subterminal line of white; margin black; fringe fuscous, edged at ends with white; beneath, light fuscous, markings faintly reflected.

Two ♂♂, Georgia, Florida. Near *H. genuinalis* Led.

EPIPASCHIÆ.

TORIPALPUS Grote.

Toripalpus taleolalis *sp. nov.*—Expands 25 mm. Head, thorax, abdomen and hind wings fuscous; fore wings even fuscous, with a cinereous tinge, the first cross line black, double, somewhat curved outward, slightly angulated within inner margin; basal field with a black band just inside the line; outer line close to margin, with an ante-median sinus, and another just before inner margin, the line faintly edged outwardly with white; one small whitish spot at centre of basal field, three on middle field, two ante-median, one post-median; marginal line black; beneath, fuscous, with indistinct outer line on all wings.

One ♀, Colorado. Allied to *T. trabalis* Grote.

Tetralopha enthealis *sp. nov.*—Expands 27 mm. Palpi and vertex fuscous brown; front coppery fuscous. Abdomen light fuscous; thorax and fore wings light ochreous; heavily marked with blackish fuscous, the whole washed with coppery red; the fuscous generally covering basal and middle spaces, leaving two lines of coppery ochreous; the first strongly angulated outwardly at the middle, the second beginning in a quadrate spot at costa, thence running zigzag with sharp dentations across to inner margin in general direction parallel with outer margin; outer space lighter than middle field; a row of marginal spots; fringe reddish fuscous; in the middle field is a reddish discal spot, annulate with ground color; two small light costal dots also on middle space; hind wings light fuscous, marginal line darker; beneath fore wings coppery ochreous, black along costa; fuscous in outer middle space; hind wings light ochreous fuscous, with faint outer band; all margins fuscous.

One ♀, Kentucky.

Tetralopha olivialis *sp. nov.*—Expands 23 mm. Palpi, head, thorax and wings to outer line olive fuscous; first line hardly evident, shown most clearly by black costal spot; a black discal spot; outer line black, heaviest towards costa, with a large outer sinus anteriorly, dentate thence to inner margin; outer space fuscous with reddish tinge, some olivaceous and lighter at middle; marginal line black, fringe interlined, black and olive fuscous; hind wings fuscous, with black discal dot and marginal line; beneath, fuscous ochreous, darkest outwardly; dots and outer lines quite distinct.

One ♂, Colorado.

Tetralopha atrifascialis *sp. nov.*—Expands 20 mm. Palpi white, black at ends; head, thorax and antennæ pure white, with some black scales intermixed; thorax with three black spots posteriorly; fore wings pure white, more or less heavily mixed with black scales, giving a snowy cinereous aspect; a black costal spot at base; the first line black, broad at costa, then constricted nearly or quite separated at middle, then broadening to costa, following inner margin to base in a fuscous shade; outer line white, sinuous, lined within with fuscous; a large, black, costal, apical triangle; black points on either side of outer line at inner margin; a marginal line of black dashes; fringe white, interlined brokenly with black; hind wings light fuscous, black marginal line; fringe as fore wings; beneath, fuscous on fore wings and anterior margin of hind wings; fringe as above. Abdomen cinereous, annulate with fuscous.

Three males and one female, Texas.

PHYCIDÆ.

NEPHOPTERYX Hübner.

Nephoptyx actualis *sp. nov.*—Expands 26 mm. Palpi, head and thorax black, with intermingled white scales giving a dark gray aspect. Abdomen grayish fuscous; fore wings cinereous fuscous, basal space in middle reddish; first line white, edged outwardly with black which is pronounced at costa; this line is angulated twice and begins on costa as far from base as on inner margin; middle space cinereous fuscous outwardly; outer line white, angulated; outer space with reddish, except at costa and posteriorly; a marginal line of well-marked black dots and a black discal spot on middle field; hind wings dark fuscous; margin black; all fringes light fuscous, black at base; beneath, quite even fuscous, a faint outer lighter line on fore wings.

One ♂, Colorado. Near *N. fenestrella* Pack.

Nephoptyx delassalis *sp. nov.*—Expands 24 mm. Palpi fuscous, reddish in front. Thorax reddish ochreous. Abdomen fuscous; fore wings reddish ochreous, quite even; costa on outer half narrowly white; first line scarcely perceptible anteriorly, whitish ochreous posteriorly with rather heavy black shadings; within and beyond these shadings indistinct whitish ochreous spots; outer line near margin evenly and strongly curved outward; hind wings fuscous outwardly, shading to light translucent fuscous towards base; a dark marginal line present; beneath, fore wings fuscous, with a faint reddish tinge; outer space a shade the lighter; hind wings as above; fringes above light fuscous, darker at base; light fuscous below.

One ♀, Nevada.

Nephoptyx perfuscalis *sp. nov.*—Expands 26 mm. Palpi and head dark fuscous; thorax above nearly black. Abdomen fuscous, with first segment black and second black above; fore wings blackish fuscous, with an ochreous shade medially on costa; two white cross lines rather broad, the first beginning below subcostal space going obliquely to inner margin, the outer near margin and parallel with it; discal space incompletely annulated with white; hind wings dark fuscous; all fringes white, fuscous at base; beneath even, light fuscous, a little lighter on outer field.

One ♀, California.

Nephoptyx lallatalis *sp. nov.*—Expands 30 mm. Palpi cinereous. black at base of second labial segment and at tip. Head and thorax cinereous. Abdomen nearly white, a little fuscous anteriorly on each segment; the whole of these peppered with black scales; fore wings cinereous, being white with a liberal peppering of black scales, most decided centrally and posteriorly; lines hardly to be traced; the first one showing in a white crescent, concave outwardly along inner margin and located on costa by black point outwardly; discal spot black, minute; outer line evident in an apical white crescent, concave outwardly, inclosing fuscous space; apex white; marginal line black; fringe gray; hind wings translucent light fuscous; fringe a shade lighter; beneath, fuscous; the hind wings lighter; a black diffuse spot at apex of fore wings indicating the outer cross line.

One ♂ one ♀, Nevada.

Nephopteryx pergratialis *sp. nov.*—Expands 28 mm. Palpi, head and antennæ dark brown; thorax brown, with a maroon shading. Abdomen fuscous; fore wings cinereous over anterior portion, becoming reddish fuscous on posterior portion; the inner line indistinct, but its outer shading of black prominent; outer line near margin, finely dentate, edged on both sides with black, especially to be noticed near apex; a subterminal cinereous dentate line and a marginal row of black spots; fringe fuscous, scales white at ends; hind wings dark fuscous; beneath, fore wings dark fuscous, hind wings fuscous.

One ♂, Florida. Near to the preceding species.

Nephopteryx uncanalis *sp. nov.*—Expands 25 mm. Palpi, head and thorax cinereous; the collar white, and thorax white laterally. Abdomen cinereous; anteriorly, annulated on the white; dark fuscous posteriorly, annulated with light fuscous; fore wings cinereous, costa at base white, the first band broad, black, constricted at costa and inner margin; two black spots well out on the middle field, one behind the other, the posterior ante-median; outer line white, not reaching costa, nearly straight, with dark shadings; outer space gray; marginal line white; hind wings fuscous outwardly, becoming translucent white at base; fringe white, fuscous at base.

One ♀, Colorado.

PINIPESTIS Grote.

Pinipestis fasciolalis *sp. nov.*—Expands 29 mm. With very much the aspect of *N. lallatalis* above, but with lines rather broad and decided, and curvatures in opposite direction; both lines shaded on both sides with black; a blackish cloud in median space ending in black discal spot; hind wings fuscous; beneath, fuscous; the fore wings darker with white spot near apex, showing beginning of outer line.

One ♂ one ♀, Nevada.

PEMPELIA Hübn.

Pempelia tarmitalis *sp. nov.*—Expands 25 mm. Palpi and head black; collar white; thorax black above, light fuscous laterally; all the black portions slightly peppered with light fuscous scales. Abdomen, first segment black above, light fuscous on sides, next segment black, the rest dark fuscous with a reddish shade; fore wings reddish brown at base, reaching one-fourth the length of wing, edged outwardly from costa to inner margin by a faint white line; a median dash of white on outer portion of base, very faint; rest of wing dark fuscous, slightly ochreous towards outer angle; merging with the white line limiting the basal color outwardly in a more prominent cinereous line, sinuous, running obliquely outward, inclosing between it and first line a patch of deep fuscous; two black spots on discal space, one anterior to the other; outer line cinereous, sinuous, dentate, faint anteriorly, obsolete posteriorly; fringe fuscous, end of scales white; hind wings pellucid fuscous; marginal line black; beneath, even fuscous, hind wings lighter, fore wings with outer line reflected.

One ♀, Colorado.

HOMEOSOMA Curt.

Homeosoma impressalis *sp. nov.*—Expands 30 mm. Palpi fuscous; head and thorax dirty white; abdomen light fuscous, white at tip. Fore wings white, a little peppered with black scales on anterior portion of basal and middle fields, washed slightly with fuscous posteriorly, and on outer space; a broad black band dividing the basal and middle fields, not reaching costa, and broken post medially, thus forming two subquadrate black spots; two black dots on outer median field, one anterior to the outer; a straight clouded outer band pretty close to outer margin; hind wings light pellucid fuscous, nearly white on anal half; beneath, pale fuscous, hind wings as above.

One ♂, Nevada.

MEGAPHYCIS Grote.

Megaphycis fernaldialis *sp. nov.*—Expands 50 mm. Palpi, head, thorax and fore wings cinereous; the thorax and wings a little the darker, the palpi being almost white at end. Fore wings with a fine black basal line on post-discal vein, running half way out the wing; beyond disc, veins 4 and 5 finely lined with black to margin; a marginal line of black spots; hind wings pellucid fuscous, iridescent, nearly transparent, white basally; marginal line dark fuscous, hairs along anal margin forming a fuscous band; fringe of fore wings cinereous, of hind wings white, fuscous at base; beneath, even glistening fuscous on fore wings; hind wings as above. Body and legs cinereous, the latter stout and long.

One ♀, Arizona. So far as I know the largest of our Pyralids, exceeding the giant *M. dentata* Grote in size. It is with great pleasure and respect, and with a vivid sense of very many favors done me, that I name it after the one who is greatest in general knowledge of the Microlepidoptera of America, and who has, if any, only one or two rivals in any special part of that great field of nature.

Megaphycis edwardsialis *sp. nov.*—Expands from 35 to 45 mm. Head, thorax, abdomen and fore wings fuscous to blackish fuscous; post-discal and submedian veins lined with black; an outer light fuscous cross line, before which all veins have a short black dash continued beyond on outer space; hind wings lighter dull fuscous; beneath, even fuscous.

Two ♂♂ one ♀, Nevada. Named in honor of Hy. Edwards, who has added very much to our knowledge of the insects of all orders of the Pacific coast, and who for his constant acts of generosity has my gratitude.

ANERASTIA Hübn.

Anerastia excantalis *sp. nov.*—Expands 22 mm. Palpi light fuscous; the rest of the insect, except abdomen and hind wings, soft fuscous brown, the middle field of fore wings perceptibly darker. Abdomen soft blackish fuscous; hind wings fuscous, with a faint darker marginal line; beneath, concolorous, with hind wings above.

One ♀, California.

Anerastia cestalis *sp. nov.*—Expands 25 mm. Palpi, head and thorax gray; shoulders nearly white. Abdomen fuscous; fore wings fuscous, mixed with cinereous, not evenly, but running in indistinct longitudinal dashes; a black point on costa marking the probable position of the obsolete first cross line; outer line black, not very distinct, oblique, strongly dentate costally; a large lighter patch, in which the fuscous does not so much prevail; costally next the outer line on the middle field; margin cinereous, inclosing row of black points; fringe cinereous, interlined with black; hind wings fuscous; fringe whitish, fuscous at base; beneath, light fuscous; fore wings cinereous along costa, with two apical black points; wing nearly white along inner margin; fringe as above; hind wings cinereous in front, fringe as above.

One ♀, Colorado.

Anerastia dotalis *sp. nov.*—Expands 26 mm. Palpi, head, thorax fuscous white, with a few scattered black scales. Abdomen fuscous white, with a faint ochreous cast on the posterior part of each segment; fore wings and base ochreous, followed by light cinereous; first cross line blackish, running obliquely outward, strongly angulated at ante-median space, edged with whitish on basal side, and that edged with a broad even ochreous fuscous band; middle field white, much peppered with black on anterior half, the same with an ochreous shading on posterior half; discal spot ochreous, annulated with black; outer line oblique, somewhat angulated just before middle, edged outwardly with whitish, and that with a band of same width and color as the one within basal line; outer space cinereous, inclosing a subterminal black line; fringe cinereous; hind wings pellucid white, slightly fuscous on anterior angle; fringe white; beneath, fore wings dirty white, with a faint ochreous shade along costa, on outer field, and broadly along inner margin; centrally fuscous; hind wings white, a little fuscous on anterior margin.

One ♀, Arizona. This insect differs from any other I know in its full rounded bulging clypeus, and is not properly congeneric.

EPHESTIA Güen.

Ephestia albocostalis *sp. nov.*—Expands 28 mm. Palpi cinereous, indistinctly annulated with whitish; head and collar snowy cinereous; thorax and abdomen dark fuscous cinereous; fore wings with a snow white costal band, occupying the space to the subcostal vein, and reaching outwardly to a point nearly at apex, fading on the outer half along costa into mouse color; the rest of the wing dark fuscous, basally and medially, fading behind and outwardly into fuscous mouse color, a very fine submedian white dash present on middle portion; fringe blue-gray, finely interlined with white; hind wings fuscous outwardly, fading to light fuscous basally; fringe light fuscous; beneath, dark fuscous, with a lengthened ante-median white spot, crowned with ochreous subcostally; hind wings as above.

One ♂, California.

As has been seen, I have described many of the above from females only. The generic determination, as genera at present stand, is loosely hypothetical. I have named them simply that they may be handled in the science.

CRAMBIDÆ.

CRAMBUS Fabr.

Crambus extorralis *sp. nov.*—Expands 16 mm. Head, palpi and thorax above fuscous; shoulders and abdomen white, with fuscous annulations on latter; fore wings with costa dark fuscous to subterminal cross line, this followed by a broad pure silver white longitudinal band from base to cross line; this edged with dark fuscous; behind fuscous along inner margin, ochreous between, fading into fuscous outwardly; cross line white, bifid anteriorly, running with one arm to costa, the other which is the continuance of the broken central band to apex, edged inwardly with dark fuscous; apical triangle dark fuscous, light centrally along costa; subterminal space fawn, marginal line black, fringe white at base, fuscous outwardly; hind wings nearly pure white; beneath, fore wings fuscous, hind wings white.

Two ♂♂, Florida, Louisiana. Of the *leachellus* group.

Crambus trichusalis *sp. nov.*—Expands 30 mm. Palpi dark fuscous, white above. Head fuscous, mixed with white; antennæ fuscous; thorax white anteriorly, fuscous behind. Abdomen fuscous; fore wings generally dark fuscous; costa cinereous, except at base and near apex; subcostal space cinereous; median space white, not quite reaching base or outer cross line; long, pointed at each end; submedian space light fuscous, inner margin outwardly whitish, the cross line white, curved, lined inwardly with dark fuscous; apical fuscous space inclosing white triangle; subterminal space white, toothed and broken with fuscous; marginal black line anteriorly, five black dots posteriorly; hind wings white, with a fuscous shade; beneath fuscous, with markings reflected, strongly whitish subterminally; marginal spots distinct; hind wings white.

One ♂, Colorado. Near *C. hastiferellus* Walk.

Crambus cypridalis *sp. nov.*—Expands 30 mm. Palpi cinereous fuscous; thorax and abdomen ochraceous fuscous; fore wings ochraceous, somewhat cinereous along inner margin; a broad, white, median band reaching to, but not passing, cross line; broad at base, pointed outwardly; above its point a narrow white space and another within line at costa; costal, apical and outer apical white triangles divided by a fuscous apical line; posterior subterminal space cinereous fuscous, inclosing five black dashes on veins; marginal line fine, fuscous; fringe white, fuscous at base posteriorly; hind wings white, slightly fuscous at apex; beneath, fore wings light fuscous; white outwardly, along inner margin and medially; hind wings white.

One ♂, Utah. Allied to *C. hastiferellus* Walk.

Crambus delectalis *sp. nov.*—Expands 30 mm. General color a dirty ochreous with lighter shadings; fore wings crossed at middle by a lighter ochreous line, angulated strongly twice outwardly; outer line curved, wavy, light dirty ochreous, edged inwardly with fuscous; beyond, costa to apex white; an irregular white spot at middle in subterminal space with a black dash anteriorly and posteriorly; apex and subapical space outreaching by a squarely cut off space on outer margin; apex with a white line; fringe at apex white, then fuscous,

white at break, fuscous at angle within, light fuscous below; hind wings translucent fuscous; beneath, light fuscous, marked with white and dark interlines at apex of fore wings.

One ♀, Arizona. Perhaps not congeneric with *Crambus*.

Crambus offectalis *sp. nov.* Head, palpi, thorax and abdomen fuscous gray, nearly mouse color; fore wings, costa irregularly broken black and white; apex above with a small quadrate white spot; wing ochreous on ante-median portion, some edged along veins with fuscous, running by striations into a band of smoky blackish along inner margin; two brown dashes near middle of wing; outer cross line only indicated; subterminal space cinereous at middle, with veins marked with black; fringe mixed black and white; hind wings dark fuscous, marginal line black; beneath fuscous, with light ochre medially and along costa of fore wings; hind wings lighter than above. Expands 28 mm.

One ♀, Colorado. Takes a place best in the *exsiccatu*s group.

Crambus cuneolalis *sp. nov.*—Expands 19 mm. Maxillary palpi fuscous cinereous, labial palpi nearly white; thorax fuscous anteriorly; posteriorly and abdomen light cinereous; wings cinereous, overlaid more or less with fuscous shadings, these giving a basal and median cross band; an extra median twice strongly angulated line, black at middle, edged with unbroken cinereous within; another dark line within and edging outer white line, which is angulated ante-medially; in subterminal space a white spot at apex and post-medially, the latter crossed by four black vein dashes; marginal line fuscous, outer edge broken at apex, but not so squarely as in preceding species; fringe interlined black and white at apex, fuscous behind; hind wings light fuscous; beneath fuscous, ochreous along costa, cinereous along outer margin, white at apex; hind wings fuscous white.

Two ♂♂, Texas. The above has considerably the appearance of *C. hulstellus* Fern.

Crambus refotalis *sp. nov.*—Expands 20 mm. Palpi speckled fuscous and light ochre. Head, thorax and abdomen light ochre; fore wings light ochre at base, becoming ochreous outwardly, overlaid with squammose fuscous; a median indistinct black line running from middle of inner margin obliquely outwards to costa; a smoky, cinereous, indistinct, broken outer band, with a fuscous cinereous patch medially just before it; margin with a row of black dots; fringe cinereous at base, fuscous outwardly; hind wings fuscous; fringe lighter; beneath, light fuscous; base of fringe white.

Two ♂♂, Colorado. Near to *C. oregonicus* Grote.

Crambus biothanatalis *sp. nov.* Size and ground color very much as the preceding; ochreous white in median space from base and along inner margin reaching nearly to cross line; cross line broken white and light ochre, rectangular, edged inwardly by dark shading; marginal space ochreous, with a black point at end of each vein; fringe metallic fuscous, giving a golden reflection; hind wings fuscous; fringe light fuscous; beneath, uniform light fuscous.

One ♂, California. Near to *C. attenuatus* Grote.

Crambus bonusculalis *sp. nov.*—Size of preceding. Palpi, head, collar and shoulders white; thorax and abdomen light ochre; fore wings light ochre, with veins fuscous shaded; two golden ochreous cross lines, the first at outer edge of cell, sinuous, the other subterminal, edged outwardly with fuscous; marginal band of golden yellow; a marginal row of black points; fringe metallic, black at base, iridescent outwardly, silvery near outer angle; hind wings white, washed with gold outwardly; beneath fuscous, yellowish outwardly on fore wings; fringe dark fuscous, metallic along inner margin; hind wings white; marginal line of hind wings yellowish.

Two ♀ ♀, Massachusetts. Close to *C. ruricollellus* Zell., and perhaps a variation of that species.

Crambus gausapalis *sp. nov.*—Expands 24 mm. Palpi ochreous, mouse color at end. Head and thorax ochreous fuscous. Abdomen nearly mouse color; fore wings light ochreous, cell marked with brown; beyond all veins edged with brown; two brown lines, the first forming the outer edge of cell, strongly angulated at end of cell, the second subterminal with a right angle at middle, edged inwardly with yellow and outwardly with dull white; outer space brown, whitish ochreous along margin; an ante-median marginal line with post-median black spots; outer edge falcate; apex pointed; fringe interlined, metallic on posterior half of wing; hind wings white, anterior margin yellow; marginal fuscous line at apex; beneath, fuscous, outer line faintly evident in row of dark points; outer space whitish; marginal line black; hind wings as above.

Two ♂ ♂ one ♀, Sierra Nevada Mountains, California. Also near to *C. ruricollellus* Zell.

Crambus comptulatalis *sp. nov.*—Expands 25 mm. Palpi dark fuscous, lighter at base; thorax brown. Abdomen dark mouse color, annulated with lighter shade; fore wings very even ochreous brown, somewhat fuscous on outer space, some intra-median black scales followed by a faint white dash; orbicular a black dot preceded by a faint white dash, and succeeded by a small white spot; hind wings dark fuscous, with three or four indistinct median whitish spots, indicating an outer line; beneath, uniform fuscous brown, with fore wings fuscous in median space.

One ♀, Vancouvers Island. It is with much doubt I place this insect in this genus.

SCHOENOBIOUS Dup.

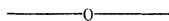
Schoenobius opalescalis *sp. nov.*—Expands 29 mm. Palpi dark fuscous, cinereous above; head cinereous; thorax dark fuscous. Abdomen fuscous, annulated with cinereous; fore wings light gray, formed of several longitudinal narrow bands of white and light fuscous, the scales of the two colors being much mixed; costa and a post-median line more decidedly fuscous; apex much rounded; fringe concolorous with wings; hind wings light fuscous, somewhat opalescent; marginal line white; beneath, fuscous on fore wings, whitish apically; hind wings as above.

One ♂, Arizona. The wings outwardly are very different from the other species of this genus, as they are very much rounded at apex.

Since the preceding pages were in press the following species has been detected :

Hydrocampa australis *sp. nov.*—Expands 16 mm. Palpi ochreous blackish at tip; front ochreous, vertex and base of antennæ black; thorax and abdomen light ochreous; fore wings generally light ochreous, basally to reniform variegated with fuscous ochreous, beyond more generally fuscous ochreous; there is a rounded line close to base; a second just beyond, straight; a third running from reniform to inner margin straight; the reniform is long, reaching to costa, constricted so as to be nearly divided near costa, annulate with fuscous; an outer line running from costa sinuous to outer angle just before reaching which, it runs a short distance parallel with the margin around angle; within this line are two light ochreous spots, one costal the other post-median; marginal line fuscous, fringe interlined fuscous and light ochreous; hind wings with second and third lines of fore wings continued, generally light ochreous; within middle fuscous, outwardly in each case broken with the other color; marginal line fuscous; fringe interlined fuscous and light ochreous; beneath fuscous, and fuscous ochreous mixed lines faintly marked; all colors much indeterminate, hind wings lighter, marginal lines fuscous; fringes mixed fuscous and light fuscous.

One ♂, Florida.



The following errors have accidentally escaped correction :

Page 147, for **enniculalis** read **anniculalis**.

“ 154, “ **thrallophilalis** read **thallophilalis**.



ERRATA.

Page 69, line 19 from top, for differences, read difference.

In the "Review of the species described by Olivier" a number of typographical errors has been allowed to pass uncorrected by the printer, although noted on the proof. As the paper is merely a catalogue, those having occasion to use it will readily observe the errors without especially noting them here.—G. H. Horn.

Page 146, for *Aglossa gripalis*, read *griphalis*.

" 149, for *Botis psychialis*, read *psychicalis*.

" 159, line 5 from bottom, omit period after "follow" and insert comma.

" 164, for *Ephestia albocostialialis*, read *albocostalis*.

The head lines on pp. 309–323 for North American Diptera, read South American.